



MEETING ABSTRACT

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Reduced Tim-3 expression on HTLV-I Tax-specific cytotoxic T lymphocytes in HTLV-I infection

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T-cell immunoglobulin and mucin domain-containing molecule-3 (Tim-3) and programmed cell death-1 (PD-1) are T-cell exhaustion molecules. We investigated the expression of Tim-3 and PD-1 in HTLV-I infection. Tim-3 expression, but not PD-1 expression, was reduced on CD4⁺ and CD8⁺ T cells of HAM/TSP patients and HTLV-I carriers as compared to healthy controls. Tim-3 expression was also reduced in HTLV-I Tax-specific cytotoxic T lymphocytes (CTLs) as compared to cytomegalovirus-specific CTLs. Tim-3⁺, but not PD-1⁺, Tax-specific CTLs produced less interferon- γ and exhibited low cytolytic activity. However, we observed no difference in the expression of Tim-3 or cytolytic activity between Tax-specific CTLs of HAM/TSP patients or carriers. Moreover, HTLV-I-infected CD4⁺ T cells showed decreased Tim-3 expression. The decreased expression of Tim-3 in HTLV-I infection is a marked contrast to other chronic viral infections such as HIV and HCV infection, where Tim-3 expression is increased in T cells, including the virus-specific CTLs. In HTLV-I infection, CTL response may not be negatively regulated by Tim-3. Rather, immune cells such as HTLV-I-specific CTLs may be resistant to cell death through the Tim-3/galectin-9 pathway. In summary, our data suggest that Tim-3 expression is reduced in HTLV-I infection and that a high number of Tim-3⁻ HTLV-I-specific CTLs preserves their cytolytic activity, thereby controlling viral replication.

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